

CLAIMS

- [1] A functional starch powder having a water retention capacity of 400% or more, a collapse time of 5 hr or more and a gel indentation load of 200 g or more.
- [2] A functional starch powder according to claim 1, wherein the powder was dispersed in water, and the amount of amylose and amylopectin ranges from 10 to 90% by weight and is in a swollen or dissolved state.
- [3] A functional starch powder according to claim 1 or 2, which comprises starch particles with a particle size of 50 to 500 μm having a structure indented in one or more parts.
- [4] A composition comprising functional starch powder according to any one of claims 1 to 3 and one or more active ingredients.
- [5] A composition according to claim 4, wherein the one or more active ingredients are selected from pharmaceutically active ingredients, agrochemical ingredients, ingredients for fertilizer, ingredients for feed, ingredients for food, ingredients for cosmetic, coloring matters, flavoring materials, metals, ceramics, catalysts and surfactants.
- [6] A composition according to claim 4 or 5, which controls the release of the active ingredient(s) so that the release may be sustained release or rapid release.
- [7] A method for producing functional starch

powder according to any one of claims 1 to 3, which comprises heating a starch raw material in the presence of water at 60 to 150°C to swell starch particles of the starch raw material, and subsequently drying the swollen starch particles to obtain a powder mixture comprising starch particles and amylose and amylopectin which are present in the exteriors of these starch particles.

[8] A method for producing functional starch powder according to any one of claims 1 to 3, which comprises heating a starch raw material in the presence of water at 60 to 150°C to swell some or all of starch particles of the starch raw material at a volume ratio of 10 or more, and subsequently drying the swollen starch particles to obtain a powder mixture comprising starch particles having a structure indented in one or more parts thereof and amylose and amylopectin which are present in the exteriors of these starch particles.

[9] A method according to claim 7 or 8, wherein the starch raw material is that heat-treated at 100 to 130°C under reduced pressure.

[10] A method according to claim 9, wherein the starch raw material is potato starch.